Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

AMERICAN

JOURNAL OF BOTANY

OFFICIAL PUBLICATION OF THE

BOTANICAL SOCIETY OF AMERICA

EDITORIAL COMMITTEE

F. C. NEWCOMBE, Editor-in-Chief,
University of Michigan

C. STUART GAGER, Business Manager
Brooklyn Botanic Garden

IRVING W. BAILEY,
Bussey Institution

H. H. BARTLETT,
University of Michigan

A. S. HITCHCOCK,
Bureau of Plant Industry

L. R. JONES,
University of Wisconsin

EDGAR W. OLIVE,
Brooklyn Botanic Garden

VOLUME II—1915

WITH EIGHTEEN PLATES AND NINETY TEXT FIGURES

PUBLISHED

IN COOPERATION WITH THE BOTANICAL SOCIETY OF AMERICA

BY THE

BROOKLYN BOTANIC GARDEN

AT 41 NORTH QUEEN STREET, LANCASTER, PA.

Reprinted with the permission of the original publisher

JOHNSON REPRINT CORPORATION

NEW YORK AND LONDON

First reprinting, 1960, Johnson Reprint Corporation

TABLE OF CONTENTS, VOLUME II, 1915

No. 1, January

PAGE

Investigations on the phylogeny of the Angiosperms. 5. Foliar evidence as to the ancestry and early climatic environment of the Angiosperms (with plates I–IV).
EDMUND W. SINNOTT AND IRVING W. BAILEY 1

The growth-forms of the flora of New York and vicinity.
NORMAN TAYLOR 23

The temperature of leaves of Pinus in winter (with four text figures) ..... JOHN H. EHLERS 32

No. 2, February

Some effects of the brown-rot fungus upon the composition of the peach ..... LON A. HAWKINS 71

Negative heliotropism of urediniospore germ tubes (with two text figures) ..... F. D. FROMME 82

A woody stem in *Merremia gemella* induced by high warm water (with two text figures) ..... FRANK C. GATES 86

Picro-nigrosin, a combination fixative and stain for algae.
OTIS F. CURTIS AND REGINALD H. COLLEY 89

Normal and abnormal permeability ..... W. J. V. OSTERHOUT 93

A simplified precision auxanometer (with three text figures).
W. T. BOVIE 95

The mutations of *Oenothera stenomeres* (with four text figures).
H. H. BARTLETT 100

No. 3, March

Morphology as a factor in determining relationships.
J. M. GREENMAN 111

The genetic relationship of parasites ..... FRANK DUNN KERN 116

The experimental study of genetic relationships.
H. H. BARTLETT 132

No. 4, April

A three-salt nutrient solution for plants.....John W. Shive 157
Preliminary note on the morphology of Gnetum.
W. P. Thompson 161
The persistence of viable pycnospores of the chestnut blight fungus on normal bark below lesions.
R. A. Studhalter and F. D. Heald 162
A taxonomic study of *Setaria italica* and its immediate allies.
F. Tracy Hubbard 169

No. 5, May

The morphology and systematic position of Podomitrium (with seven text figures).....Douglas Houghton Campbell 199
On the relation of root growth and development to the temperature and aeration of the soil (with five text figures).
W. A. Cannon 211
The anatomy of a hybrid Equisetum (with plates V–VIII).
Ruth Holden 225
Some features in the anatomy of the Malvales (with plates IX–XI).....C. C. Forsaith 238
The absorption of ions by living and dead roots.
H. V. Johnson 250

No. 6, June

The exchange of ions between the roots of *Lupinus albus* and culture solutions containing one nutrient salt (with thirteen text figures).
Rodney H. True and Harley Harris Bartlett 255
Notes on the forms of *Castela Galapageia* (with ten text figures).
Alban Stewart 279
The development of *Pyronema confluens* var. *inigneum*.
William H. Brown 289
New or noteworthy grasses.....A. S. Hitchcock 299

No. 7, July

The exchange of ions between the roots of *Lupinus albus* and culture solutions containing two nutrient salts (with three text figures).
Rodney H. True and Harley Harris Bartlett 311

The probable non-validity of the genera Botryodiplodia, Diplodiella, Chaetodiplodia, and Lasiodiplodia (with plates XII–XIV) ..... J. J. TAUBENHAUS 324
Factors influencing flower size in Nicotiana with special reference to questions of inheritance (with four text figures). T. H. GOODSPEED AND R. E. CLAUSEN 332

No. 8, OCTOBER

The utilization of certain pentoses and compounds of pentoses by *Glomerella cingulata* ..... LON A. HAWKINS 375
The question of the toxicity of distilled water ... R. P. HIBBARD 389
An anatomical study of Gymnosporangium galls (with one text figure, and plates XV and XVI) ..... ALBAN STEWART 402
An extension to 5.99° of tables to determine the osmotic pressure of expressed vegetable saps from the depression of the freezing point ..... J. ARTHUR HARRIS 418
Calcium hypochlorite as a seed sterilizer .... JAMES K. WILSON 420

No. 9, NOVEMBER

Seasonal duration of ascospore expulsion of *Endothia parasitica* (with six text figures) ... F. D. HEALD AND R. A. STUDHALTER 429
Dimorphism in *Coniothyrium pirinum* Sheldon (with fifteen text figures) ..... C. H. CRABILL 449
The genus Espeletia (with six text figures and plate XVII) PAUL C. STANDLEY 468
A study of the relation of transpiration to the size and number of stomata (with one text figure). WALTER L. C. MUENSCHER 486

No. 10, DECEMBER

A brief sketch of the life and work of Charles Edwin Bessey (with plate XVIII) ..... RAYMOND J. POOL 505
Heredity and mutation as cell phenomena ... R. RUGGLES GATES 519
The relation between vegetative vigor and reproduction in some Saprolegniaceae (with two text figures) .. ADRIAN J. PIETERS 529
Index to Volume II 577

(Dates of publication, No. 1, Feb. 18; No. 2, Apr. 3; No. 3, Apr. 23; No. 4, May 13; No. 5, June 16; No. 6, July 17; No. 7, Aug. 18; No. 8, Nov. 4; No. 9, Dec.; No. 10, Dec.)